CLAIMS

1. Resin coated metal foil including an insulating resin composition layer and metal foil fixed to a single surface or both the surfaces of said insulating resin composition layer, wherein the resin coated metal foil characterized in that surface treatment is performed to at least an insulating resin composition layer side of said metal foil and roughening treatment is not substantially performed to both the surfaces of said metal foil.

2. The resin coated metal foil according to claim 1, characterized in that surface roughness (Rz) of said metal foil is not more than 2.0 μm in both the surfaces.

3. The resin coated metal foil according to claims 1 or 2, characterized in that a thickness of said metal foil is not more than 3 μm.

4. The resin coated metal foil according to any one of claims 1 to 3, characterized in that interfacial roughness (Rz) between said insulating resin composition layer and said metal foil is not more than 2.0 μm.

5. The resin coated metal foil according to any one of claims 1 to 4, characterized in that said surface treatment is any one of anti-corrosive treatment, chromate treatment, and silane coupling treatment or a combination thereof.

6. The resin coated metal foil according to claim 5, characterized in that said anti-corrosive treatment is performed with any one of nickel, tin, zinc, chromium, molybdenum, and

cobalt or alloy thereof.

7. The resin coated metal foil according to claims 5 or 6, characterized in that said insulating resin composition contains cyanate resin and said anti-corrosive treatment is performed with a metal mainly containing nickel.

8. The resin coated metal foil according to any one of claims 5 to 7, characterized in that said chromate treatment is performed on said anti-corrosive treatment.

9. The resin coated metal foil according to any one of claims 5 to 8, characterized in that said silane coupling treatment is performed to an outermost layer of said metal foil.

10. The resin coated metal foil according to any one of claims 5 to 9, characterized in that a silane coupling agent used for said silane coupling treatment chemically reacts with said insulating resin composition by heating.

11. The resin coated metal foil according to any one of claims 5 to 10, characterized in that said insulating resin composition contains epoxy resin and the silane coupling agent used for said silane coupling treatment contains amino functional silane.

12. The resin coated metal foil according to any one of claims 1 to 11, characterized in that said insulating resin composition contains thermosetting resin.

13. The resin coated metal foil according to any one of claims 1 to 12, characterized in that said insulating resin composition contains epoxy resin which is liquid at room temperatures.

14. The resin coated metal foil according to any one of claims 1 to 13, characterized in that said insulating resin composition

contains a latent curing agent.

15. The resin coated metal foil according to any one of claims 1 to 14, characterized in that, in said post-cure insulating resin composition, a relative dielectric constant is not more than 3.0 at 1 GHz or a dielectric loss tangent is not more than 0.01 at 1 GHz.

16. A metal clad laminate including an insulating resin composition layer and metal foil fixed to a single surface or both the surfaces of said insulating resin composition layer, wherein the metal clad laminate characterized in that surface treatment is performed to at least an insulating resin composition layer side of said metal foil and roughening treatment is not substantially performed to both the surfaces of said metal foil.

17. The metal clad laminate according to claim 16, characterized in that surface roughness (Rz) of said metal foil is not more than 2.0 μm in both the surfaces.

18. The metal clad laminate according to claims 16 or 17, characterized in that a thickness of said metal foil is not more than 3 μm.

19. The metal clad laminate according to any one of claims 16 to 18, characterized in that interfacial roughness (Rz) between said insulating resin composition layer and said metal foil is not more than 2.0 μm.

20. The metal clad laminate according to any one of claims 16 to 19, characterized in that said surface treatment is any one of anti-corrosive treatment, chromate treatment, and silane

coupling treatment or a combination thereof.

21. The metal clad laminate according to claim 20, characterized in that said anti-corrosive treatment is performed with any one of nickel, tin, zinc, chromium, molybdenum, and cobalt or alloy thereof.

22. The metal clad laminate according to claims 20 or 21, characterized in that said insulating resin composition contains cyanate resin and said anti-corrosive treatment is performed with a metal mainly containing nickel.

23. The metal clad laminate according to any one of claims 20 to 22, characterized in that said chromate treatment is performed on said anti-corrosive treatment.

24. The metal clad laminate according to any one of claims 20 to 23, characterized in that said silane coupling treatment is performed to an outermost layer of said metal foil.

25. The metal clad laminate according to any one of claims 20 to 24, characterized in that a silane coupling agent used for said silane coupling treatment chemically reacts with said insulating resin composition by heating.

26. The metal clad laminate according to any one of claims 20 to 25, characterized in that said insulating resin composition contains epoxy resin and the silane coupling agent used for said silane coupling treatment contains amino functional silane.

27. The metal clad laminate according to any one of claims 16 to 26, characterized in that said insulating resin composition contains thermosetting resin.

28. The metal clad laminate according to any one of claims

16 to 27, characterized in that said insulating resin composition contains epoxy resin which is liquid at room temperatures.

29. The metal clad laminate according to any one of claims 16 to 28, characterized in that said insulating resin composition contains a latent curing agent.

30. The metal clad laminate according to any one of claims 16 to 29, characterized in that, in said post-cure insulating resin composition, a relative dielectric constant is not more than 3.0 at 1 GHz or a dielectric loss tangent is not more than 0.01 at 1 GHz.

31. A printed wiring board characterized by being manufactured with resin coated metal foil according to any one of claims 1 to 15 and/or a metal clad laminate according to any one of claims 16 to 30.

32. The printed wiring board according to claim 31, characterized in that surface roughness (Rz) of a conductor circuit is not more than 2.0 μm.

33. The printed wiring board according to claims 31 or 32, characterized in that peel strength between said insulating resin composition layer and a conductor circuit having a width of 1 mm is not lower than 0.6 kN/m.

34. The printed wiring board according to any one of claims 31 to 33, characterized in that the peel strength between said insulating resin composition layer that has been heated at 150°C for 240 hours and the conductor circuit having the width of 1 mm is not lower than 0.4 kN/m.

35. A method of manufacturing a printed wiring board,

characterized by having a process of producing a conductor circuit through pattern electroplating in which resin coated metal foil according to any one of claims 1 to 15 and/or metal foil of a metal clad laminate according to any one of claims 16 to 30 is used as an electric power supply layer.

36. The printed wiring board manufacturing method according to claim 35, characterized in that an electroless plating layer is formed on said metal foil.

37. The printed wiring board manufacturing method according to claims 35 or 36, characterized in that chemical reaction rate-determining etchant is used when said metal foil which is a electric power supply layer is removed by etching after formation of the conductor circuit.

38. The printed wiring board manufacturing method according to claim 37, characterized in that said etchant mainly contains an acid which does not contain a halogen element, and hydrogen peroxide.

39. The printed wiring board manufacturing method according to claim 38, characterized in that said acid which does not contain the halogen element is sulfuric acid.

40. The printed wiring board manufacturing method according to claim 39, characterized in that concentrations of said sulfuric acid range from 5 to 300 g/L and concentrations of said hydrogen peroxide range 5 to 200 g/L.